

Differential Astrometry of the 61 Cygni System with the Palomar Testbed Interferometer

M. Shao, A.F. Boden, M.M. Colavita,
P.R. Lawson, and B.F. Lane

We will present results of interferometric differential astrometric measurements of the nearby binary system 61 Cygni (HD 201091 and HD 201092) taken with the Palomar Testbed Interferometer in 1998 and 1999. After numerous hardware improvements implemented as a result of our 1998 experience, 1999 data on 61 Cyg exhibits astrometric precision of 100 microarcseconds (10^{-6} arcseconds, uas) over a one week timescale, and 170 uas rms precision over a 45 day timescale. Further, the 61 Cyg component differential proper motion measured by PTI in 1999 is in excellent agreement with the Hipparcos determination of system motion. A description of the PTI astrometric architecture, examples of PTI astrometric data, how it is collected, and the data processing to obtain our differential astrometric results on 61 Cyg will be given.

Keywords for indexing: **instrumentation—interferometry, techniques—astrometry, binary stars (61 Cygni)**